

## The Knowledge Bank at The Ohio State University

### Ohio State Engineer

<b>Title:</b>	The Motor World for 1940
<b>Creators:</b>	Postlewaite, Donald Elbridge Selby, Joseph Shisler, Gordon D.
<b>Issue Date:</b>	Dec-1939
<b>Publisher:</b>	Ohio State University, College of Engineering
<b>Citation:</b>	Ohio State Engineer, vol. 23, no. 2 (December, 1939), 12-16.
<b>URI:</b>	<a href="http://hdl.handle.net/1811/35663">http://hdl.handle.net/1811/35663</a>
<b>Appears in Collections:</b>	<a href="#">Ohio State Engineer: Volume 23, no. 2 (December, 1939)</a>

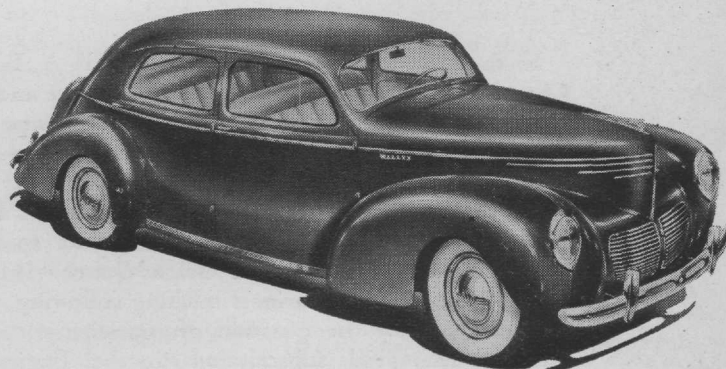
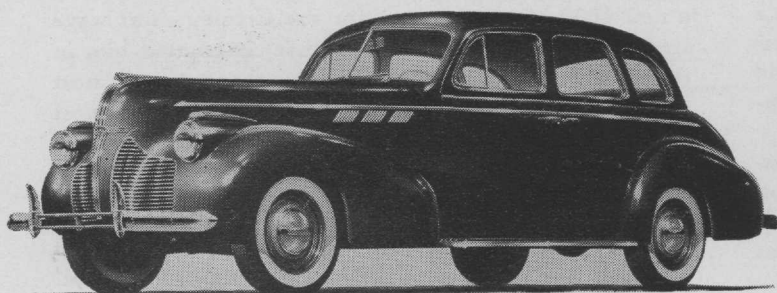
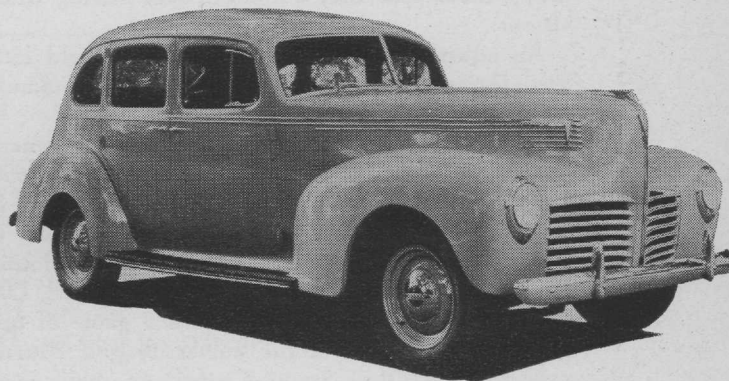
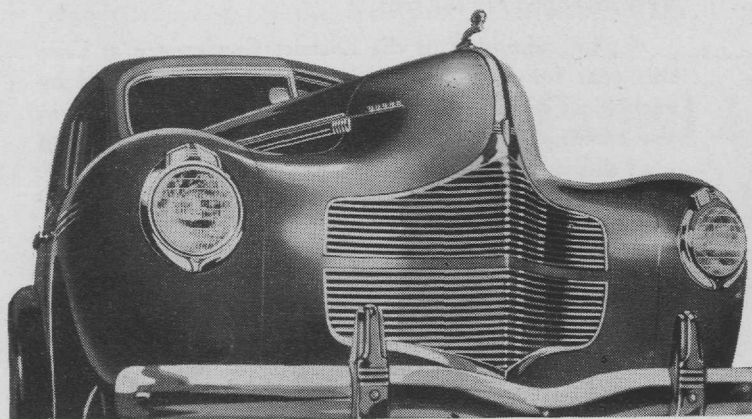
# The Motor World for 1940

By Donald Postlewaite, Joseph Selby, and Gordon Shisler

**Editor's Note:** We are not selling these cars. This is merely a summary of the 1940 models.

**S**HINY finishes and gleaming chromium are again taking the spotlight as 10 major motor car manufacturers place their models on the market. Heading the list of important improvements in the motor industry this year are: All-Weather Air Control Systems, wider front seats, Sealed-Beam headlamps, heater under front seat, and two entirely new types of upholstery. With important improvements in body design and beauty in addition to the many new conveniences on the interior of the models, Mr. Average American Motorist with the 1937 model is surely bound to find himself indulging in some wishful thinking during the next year. And, incidentally, it is significant that more and more motorists select a particular car on the basis of convenience, comfort and beauty, or because they like a certain salesman, rather than because of the rear axle construction or the number of bearings in the crank-

shaft! Thus, motor cars of today are studied on the basis of comfort and convenience as well as mechanical soundness. The manufacturers are beginning to realize this and have spared no effort to make the 1940 models as attractive and eye-appealing as possible. Chrysler Corp. enters the 1940 season with its four makes still intact and with several additions in its fourth line, the Chrysler. Entirely new body lines distinguish the Plymouth from its last year's model, the entire rear contour being changed so as to slope in a wide arc to the rear bumper. Wheelbase has been lengthened and the rear seat moved 8½ inches to the front to give much better riding qualities. This change made it possible to make rear doors full width across the bottom for easier entrance and exit. Rear windows can also be rolled clear down for more complete ventilation. Other body features include a new scientific heating and ventilating system which takes in air through the cowl ventilator, heating and distributing it through side wall vents. All Chrysler built cars feature this in their new models.



By reducing the over-all height without at the same time reducing headroom, Dodge engineers have succeeded in lowering the center of gravity in their new model. A much smoother ride has resulted from moving the front wheels 2 inches to the rear and the rear wheels  $4\frac{1}{2}$  inches in the same direction. This change results in a wheelbase of  $119\frac{1}{2}$  inches as compared with the 117 inch wheelbase of last year. As in the Plymouth, entirely new body lines with sweeping rear end contour are featured. The interior has been restyled with a new type of seat cushion, consisting of porous, air filled rubber. Front seats have been widened  $1\frac{1}{2}$  inches while rear seats are  $2\frac{1}{2}$  inches wider than last year. Power plant specifications of the Dodge as well as of the Plymouth remain unchanged.

De Soto has definitely taken on big car proportions in their 1940 model with increased horsepower as well as wheelbase. By an increase in wheelbase to  $122\frac{1}{2}$  inches without a change in overall length, a smoother ride has resulted in addition to a much longer rear compartment. Power plants have been increased to 100 horsepower to give increased acceleration and better performance. An important safety feature on the new models is the rotary door latch which means that only a slight pressure is required to close the doors. Besides the standard body types, De Soto offers a seven passenger sedan and limousine on a  $139\frac{1}{2}$  inch wheelbase with 105 horsepower engine.

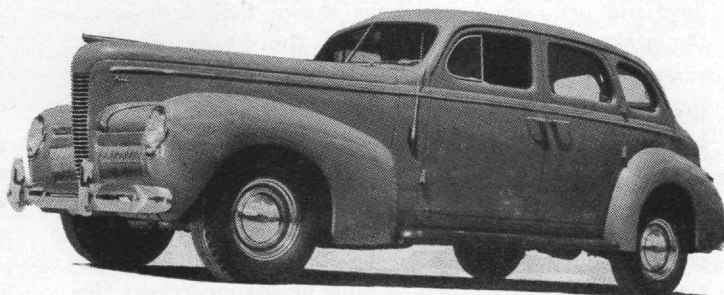
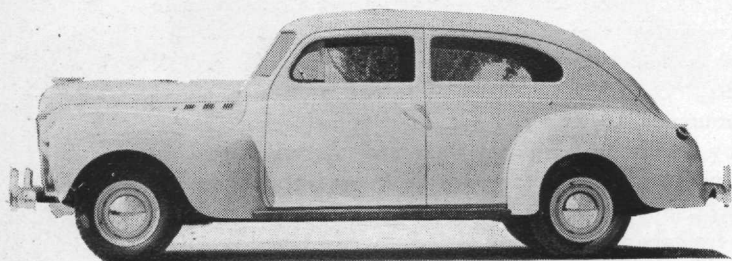
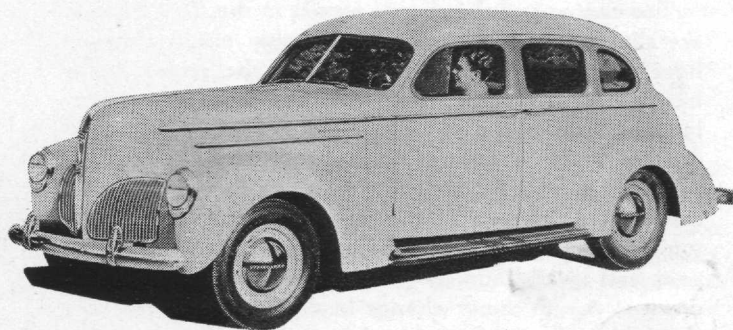
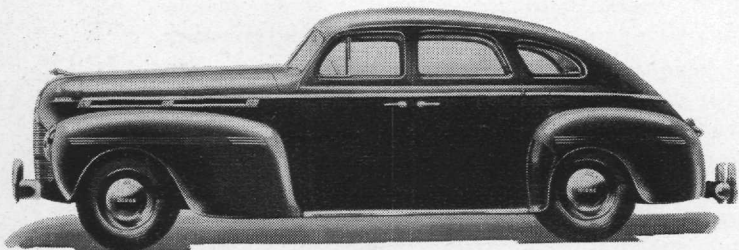
Six cars varying widely in wheelbase, powerplant and interior appointments are offered by Chrysler for 1940.

The Royal and Windsor each has a  $122\frac{1}{2}$  inch wheelbase and 108 horsepower six cylinder engine. The Windsor is distinguished from the Royal by four unusual upholstery options consisting of shades of green, brown, blue and maroon. Traveler, New Yorker and Saratoga models boast a 135 horsepower power plant mounted on a  $128\frac{1}{2}$  inch wheelbase. Chrysler's largest car, the Crown Imperial, is powered with a 143 horsepower engine on a  $145\frac{1}{2}$  inch wheelbase. The Chrysler fluid drive and fourth speed forward are standard on the Crown Imperial, but optional on the Saratoga and New Yorker.

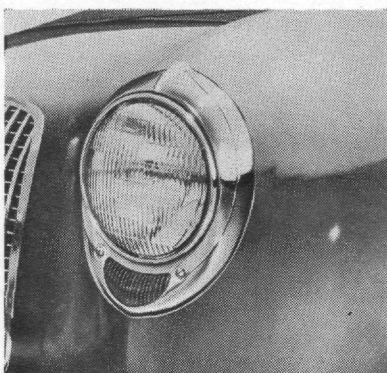
In the economy class Willys enters a new model year with different body lines and several minor changes in the power plant. These include an increase in both generator output and compression ratio.

Completely automatic air-conditioning systems are still to be perfected as shown by the fact that only Nash cars offer this feature for 1940. This system is offered at extra cost in all Nash cars. As in the past, Nash offers three cars: a 99 horsepower "six", 105 horsepower twin-ignition "six" and the largest, a 115 horsepower "eight". The twin-ignition principle consists essentially of two spark plugs for each cylinder, thus furnishing faster and more complete combustion. Both the 105 and 115 horsepower engines are of the valve-in-head type.

The new Hudson, among many minor features, has three outstanding developments. One of these, the new sealed beam headlights, they share with the other







A  
"Sealed Beam"  
Head Light

manufacturers, as they were developed through the cooperation of the entire automotive industry in collaboration with manufacturers of headlighting equipment and the American Association of Motor Vehicle Administrators. One wrinkle developed by Hudson is the combining of the directional safety signals with these lights. An exclusive feature of the Hudson is the "Double Safe Hydraulic" braking system. This combines hydraulic and mechanical brakes, using the hydraulic as the primary brakes, with the mechanical coming in if the hydraulics should fail through accident or neglect. An optional extra available on the 1940 Hudson is a new overdrive. It acts as a fourth speed forward, reducing engine revolutions and engine wear, and saving on gasoline at ordinary driving speeds. The unit is locked in and out by a control on the instrument panel. In an emergency, when high speed is necessary, the car is returned to conventional high gear by merely pressing the accelerator to the floor.

The engine and the chassis proper in the 1940 Pontiac are similar to the 1939 model, as only minor changes have been made. The Pontiac has the sealed beam headlamps in common with the rest of the new cars, but has little in the way of exclusive features. A new type of body mounting has been adopted by Pontiac with a view towards reducing noise or increasing body stability. It consists of the vulcanized rubber and cotton shims placed between the body and frame as in the past, and in addition, between the frame and the hold-down nuts. A minor change in the gear shift replaces the cable selector from the lower end of the steering column to the transmission with a simpler and more positive rod. The gear shift is mounted on the steering columns, as it is in almost all of the 1940 cars. A copper ribbon filter has been added to the crankcase ventilation system to further seal the engine against dust and grit, since tests have shown that dust enters the engine of parked cars through the ventilator outlet.

The outstanding feature on the new Oldsmobile is the "Hydra-matic Drive". Developed by General Motors engineers, it completely eliminates the clutch and gear shift, simplifying driving immensely. Shifting is done by the car itself, except when the direction of travel is reversed. The mechanism is relatively simple, employing the principle of the turbine, and using specially developed fluid, which must be changed every five thousand miles. The manufacturer claims that this

feature is entirely unlike any fluid coupling used before, and is superior to it in every respect. Whether it will be adopted by other manufacturers remains to be seen, but if it is proven practical, it probably will be found on all cars in the near future, as the simplification in driving will make it popular.

Chevrolet has no outstanding changes in the 1940 models. The vacuum power gear shift, which was introduced last year has been improved this year, but retains the essential features. The other changes are minor technical ones. The generator on the Chevrolet, in common with several other cars, is larger, with a higher charging rate, and is adjusted to maintain full output at all speeds.

The majority of changes in the Buick are on the chassis and in the connections between the body and the chassis, all being designed to give a smoother, more uniform ride. The entire mountings are also different, with a view toward decreasing vibration. Minor changes in the front and rear springing, and relocation of the shock absorbers are the two major changes in the effort to give a smoother ride.

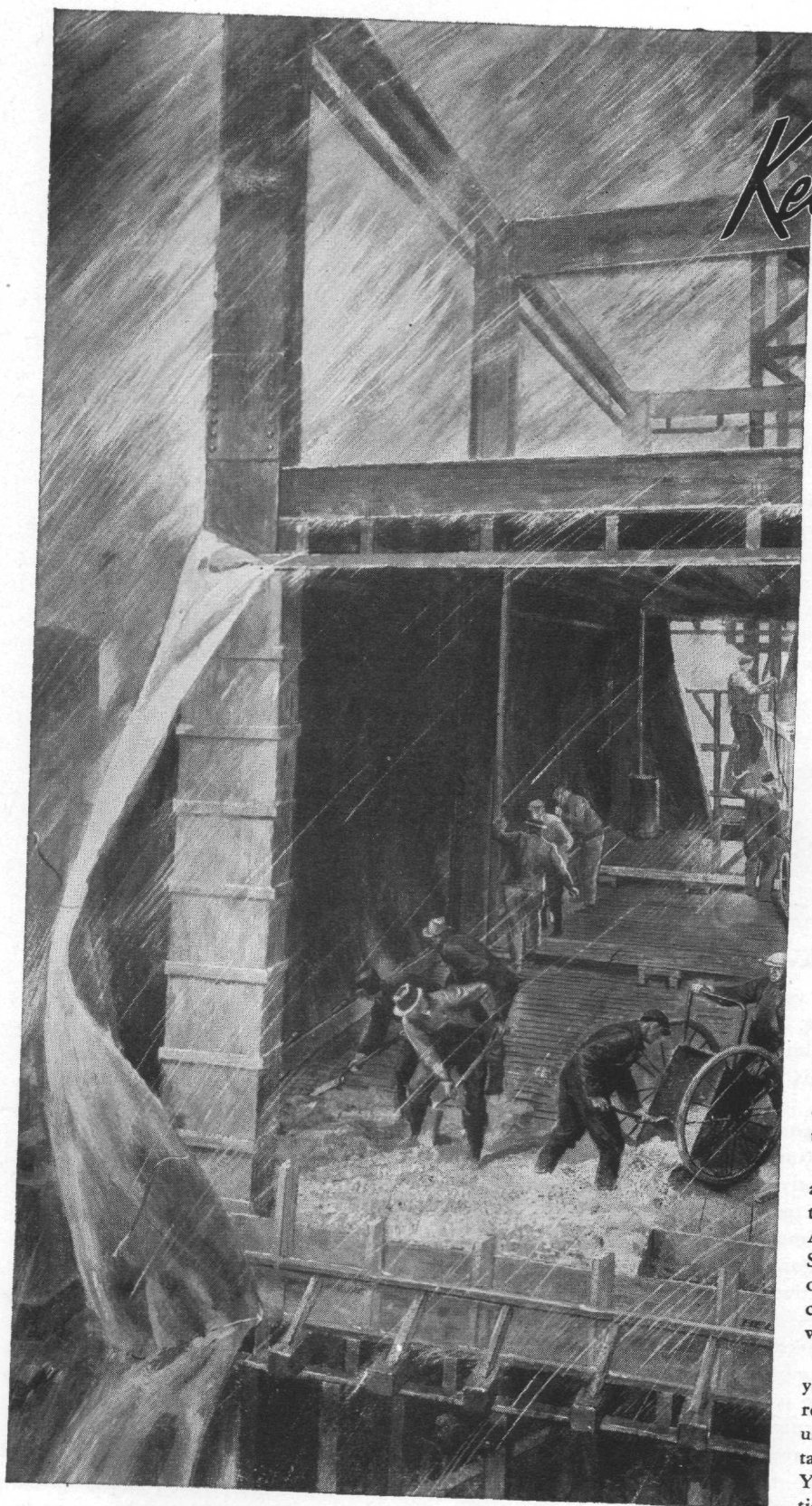
Studebaker, one of the few automobiles which is not made in Michigan but is located at South Bend, Indiana, has done much in recent years to bring a superior high class car to the low priced field. They are presenting a Studebaker champion which is nearly in the same price range as the low price cars. Among the newer safety developments are to be found better visibility, safety headlamps, hydraulic brakes, Houde double acting shock absorbers, automatic heat and spark controls, etc. Windshields and windows are broadened and heightened. The champion has 2,058 square inches of exposed window area whereas the Commander and President each have 2,321 square inches. This has been accomplished without weakening any of the box-section pillars of the all steel bodies.

The headlights are another source of increased safety both for the driver and for the drivers of approaching cars and pedestrians. The sealed beam headlamp incorporates the lens, reflector, and filament in a permanently sealed unit, providing complete protection for life against dirt, moisture, and corrosion. This construction practically eliminates deterioration of the reflector, with almost no decrease in the effectiveness and the light throughout its life. Other features are permanent and accurate assembly and correct focusing at the factory and simplicity of replacement by dealers.

Comfort and style, of course, are not overlooked as the interiors present new charm. There is a deft use of chromium, which along with stainless steel, colorful plastics and broadcloth upholstery, create a comfortable atmosphere of a modern living room.

Free wheeling and overdrive are available on all models. Overdrive is designed to cut in at 30-35 miles per hour and may be cut out, to obtain quick acceleration by simply pushing the accelerator through the wide open position to the floor, where it contacts a solenoid control that permits the overdrive pawl to disengage.

These cars are smoothly styled and designed to eliminate all excess or dead weight thereby permitting greater liveliness and gasoline economy.



## Keeping Concrete from Catching Cold

CONCRETE, LIKE HUMAN BEINGS, must be kept from catching cold.

Dow chemists have a prescription for this purpose now widely used by contractors. For if concrete "catches cold" it freezes. Curing time is prolonged and other difficulties arise.

Concrete must be cured, whatever the temperature may be. The curing, of course, does not refer to any illness suffered by the concrete, but to treatment that increases the extent of the hydration (water adsorption) of the silicate compounds which constitute a large portion of Portland cement.

These extremely small jelly-like particles of silicate form a cementing film to hold together the crushed gravel, stone or slag which makes up a large portion of the concrete. In winter it is extremely important that this cementing process be accomplished as quickly as possible.

The "cold cure," or rather the cold preventive, which Dow chemists prescribe for concrete is calcium chloride made available in a convenient form known as DOWFLAKE.\* Calcium chloride has a strong affinity for water. It therefore increases the rate and extent of hydration (water adsorption) and the quantity of gelatinous silicate.

Its use assures, really, a victorious race against time and temperature, for it means that the curing period can be cut in half. Authentic tests by the National Bureau of Standards established that with two per cent of calcium chloride the time for standard concrete to attain safe comprehensive strength was reduced from 14 to 7 days.

When you reduce curing time in winter you reduce freezing hazards and the time required for protective measures, such as the use of salamanders (mobile heating units), tarpaulins and other expensive equipment. You are also reducing labor and construction costs and the chances of penalties for failure to complete the job on time. The lower the temperature, the more effective the use of DOWFLAKE to protect concrete and to produce high early strength.

And so out of Dow laboratories comes still another product that chemical research has made indispensable to industry.

\*Trade Mark Reg. U. S. Pat. Off.

THE DOW CHEMICAL COMPANY  
1190 East Main Street MIDLAND, MICH.



CHEMICALS INDISPENSABLE  
TO INDUSTRY

The Champion has an overall length of 188¾ inches, with a six-cylinder engine, mounted in live rubber at 3 points with 164.3 cubic inches displacement.

The Ford V-8 and DeLuxe Ford V-8 cars for 1940 present notable advance in styling, comforts, convenience, and safety. Body lines pleasingly streamlined; front end designs are modern, with low radiator grills; long, well-proportioned hoods and deeply rounded fenders. There is more space in the car, and with the new type finger-tip gearshift on the steering post, three can ride in the front seat with great comfort. The new type gear shift is standard equipment on all models at no extra cost.

Twenty-one new Ford improvements are listed.

For comfort: 1. More room inside

2. New Controlled Ventilation

3. New ride-stabilizer

4. Improved spring suspension

5. Self-sealing shock absorbers

6. Two-way adjustable driver's seat

7. New-type resilient front seat backs

8. New "floating edge" seat cushions

For convenience: 9. Finger-Tip steering post Gearshift

10. Two-spoke steering wheel

For style: 11. New exterior beauty

12. New interior luxury

13. New instrument panel.

For silence: 14. Improved soundproofing

15. Easy shift transmission

16. New design curved disc wheels

17. Improved drums for big hydraulic brakes

For safety: 18. New Sealed-Beam Headlamps

19. Dual windshield wipers mounted at base of windshield

20. Bigger battery capacity, larger generator

21. Battery Condition Indicator on all models

Soundproofing has been adapted to the new cars to eliminate all noises in car parts or noises transmitted from the road. New wheels contribute considerably to the notable quiet since they are of the curved disc type which helps to reduce tire and road noises, as well as the sound of brake applications. The Ford chassis stays steady on sharp curves because it is stabilized by a unique combination of torque tube drive, radius rods and flexible transverse springs, plus an unusually low center of gravity.

In the manufacture of Lincoln-Zephyr V-12 for 1940, the basic fundamental of its construction, the unit body and frame is retained. However, there are no unusual features developed other than new styles in design.

The Mercury 8, the newest of the Ford cars, enters its second year with the record for sales in its first year making automotive history.

It is evident from the descriptions of the advancements made in the 1940 cars that the American automobile manufacturers are expecting a banner year for car sales. However, these are practical men and they believe that "God helps those who help themselves". Hence, they are more than meeting the American public half way by offering these fine cars at such low prices.